ORDER NO. HAD84012706C9

Service Manual

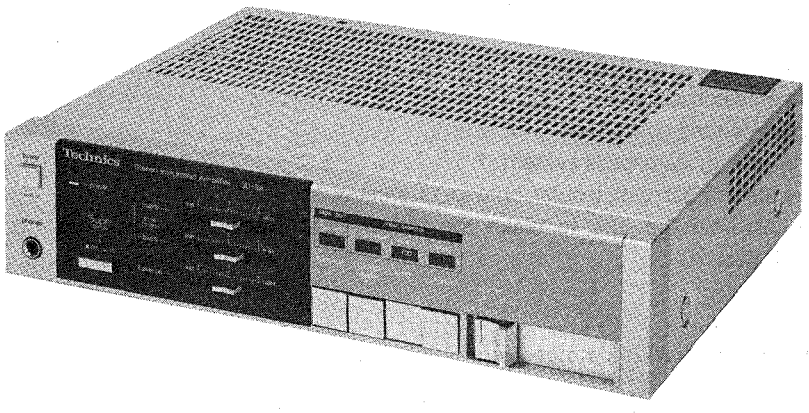
Stereo Integrated Amplifier

SU-5A

[EX], [EF], [EB], [EH], [Ei], [EW]
[EGA], [EK], [XA], [XL], [PA], [PE]

SU-5A(K)

[EX], [EH], [Ei]
[EW], [EGA], [EK], [XA]



* The colors of this model include silver and black.
* The black type model is indicated by (K) in the Service Manual.

Areas

* [EX] is available in Scandinavia.
* [EF] is available in France.
* [EB] is available in Belgium.
* [EH] is available in Holland.
* [Ei] is available in Italy.
* [EW] is available in Switzerland.
* [EGA] is available in F.R.Germany.
* [EK] is available in United Kingdom.
* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
* [XL] is available in Australia.
* [PA] is available in Far East PX.
* [PE] is available in European Military.

Specifications

(Specifications are subject to change without notice for further improvement.)

(DIN 45 500)

■ AMPLIFIER SECTION

40 Hz~20 kHz continuous power output	
both channels driven	2 × 25W (8Ω)
1 kHz continuous power output	
both channels driven	2 × 30W (8Ω)
Total harmonic distortion	
rated power at 40 Hz~20 kHz	0.8% (8Ω)
rated power at 1 kHz	0.8% (8Ω)
half power at 1 kHz	0.05% (8Ω)
Intermodulation distortion	
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0.8%
Power bandwidth	
both channels driven, −3 dB	10 Hz~25 kHz (8Ω)
Residual hum and noise	0.5 mV
Damping factor	27 (8Ω)
Input sensitivity and impedance	
PHONO	2.5 mV/47kΩ
TUNER, AUX/CD/VIDEO	150 mV/22kΩ
TAPE/EXT	150 mV/22kΩ
PHONO maximum input voltage (1 kHz, RMS)	150 mV
S/N	
rated power (8Ω)	
PHONO	68 dB (IHF, A: 72 dB)
TUNER, AUX/CD/VIDEO, TAPE/EXT	88 dB (IHF, A: 95 dB)
Tone controls	
BASS	50 Hz, +10 dB~ −10 dB
TREBLE	20 kHz, +10 dB~ −10 dB
Frequency response	
PHONO	RIAA standard curve ±0.8 dB (30 Hz~15 kHz)
TUNER, AUX/CD/VIDEO, TAPE/EXT	10 Hz~60 kHz (−3 dB)
Output voltage	
REC OUT	150 mV
Channel balance, AUX/CD/VIDEO 250 Hz~6,300 Hz	±1.0 dB
Channel separation, AUX/CD/VIDEO 1 kHz	45 dB
Headphones output level and impedance	450 mV/270Ω
Load impedance	8Ω~16Ω

■ GENERAL

Power consumption	160W
Power supply	
For United Kingdom and Australia	AC 50 Hz/60 Hz, 240V
For continental Europe	AC 50 Hz/60 Hz, 220V
For others	AC 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (W×H×D)	315 × 75 × 248 mm (12-13/32" × 2-15/16" × 9-3/4")
Weight	3.8 kg (8.4 lb.)

Note:
Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Technics

Panasonic Tokyo
Matsushita Electric Industrial Co., Ltd.
1-2, 1-chome, Shiba-koen, Minato-ku, Tokyo 105 Japan

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

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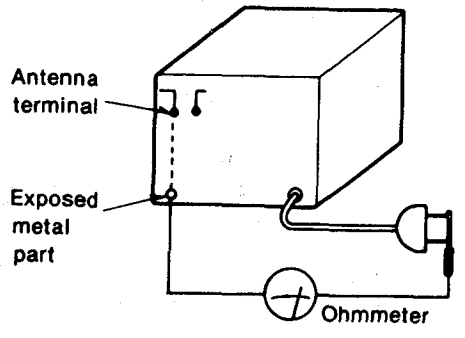
■ SAFETY PRECAUTION

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

• INSULATION RESISTANCE TEST

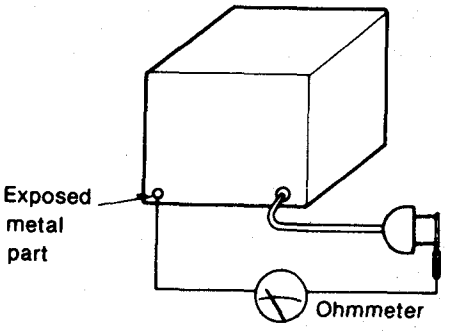
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance = 3MΩ—5.2MΩ



(Fig. B)

Resistance = Approx ∞

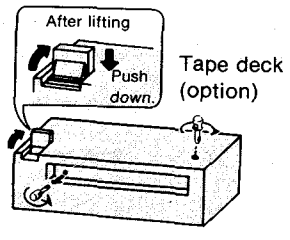
4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

■ STANDARD CONNECTION METHOD WITH DIRECT CONNECTOR

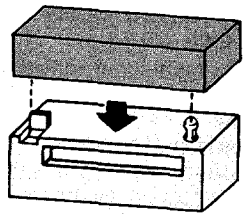
① Lift the direct connector on the tape deck. Push it straight down to lock it into place.

② Remove the stabilizing pin from the back panel. (Turn counterclockwise 90° and pull.)

③ Insert the pin into the top panel. (Push in and turn clockwise 90°.)



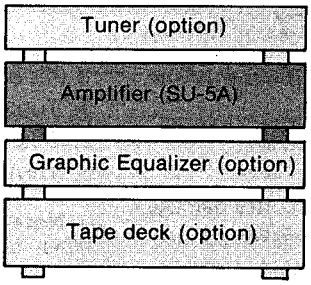
④ Lower the amplifier onto the tape deck. Line up the direct connector and stabilizing pin properly.



⑤ Connect the tuner to the amplifier the same way as in ① ～ ④.

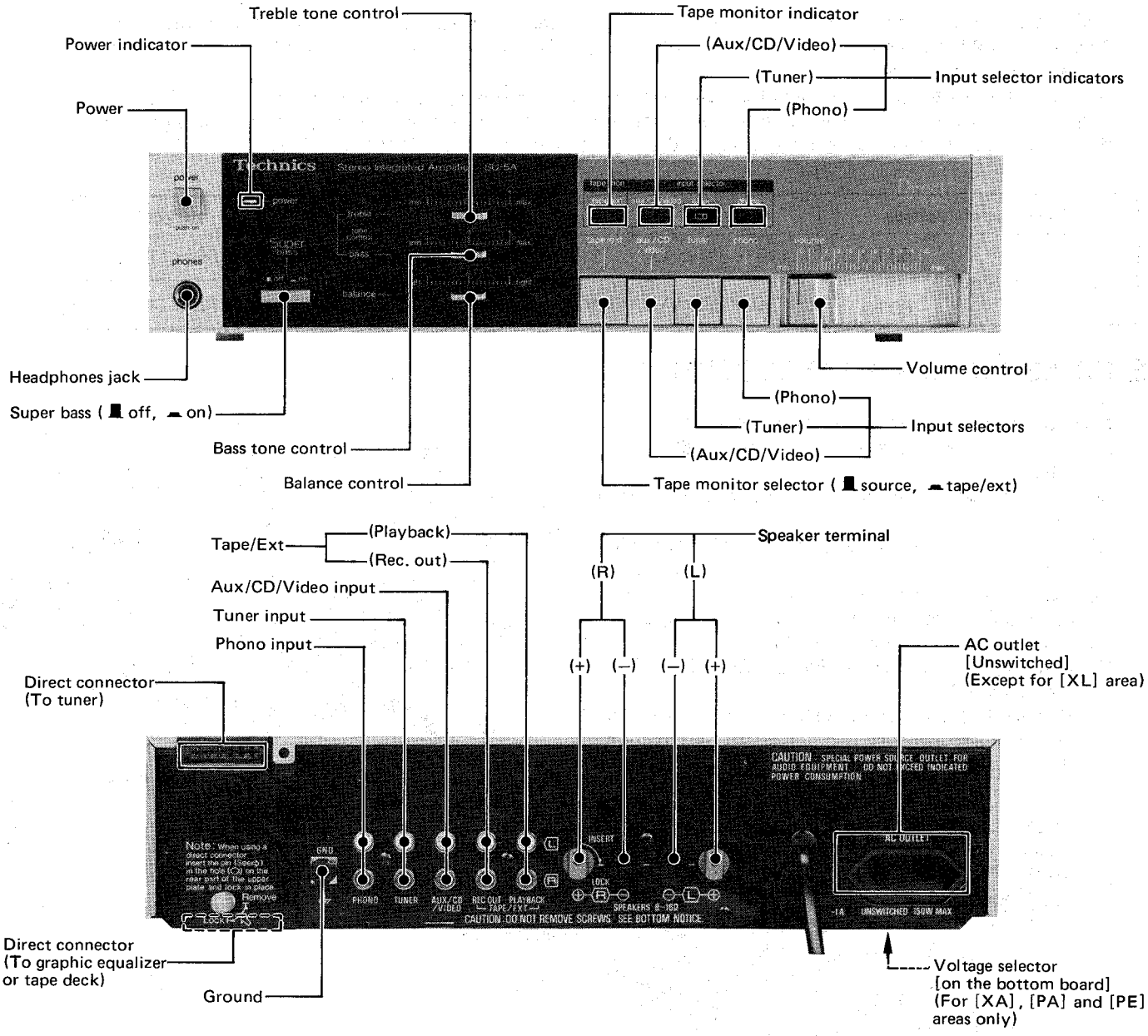
⑥ Connect the turntable and speakers with their respective cords.

Notes:
1. When using the direct connectors, do not use pin cords.
2. When using a graphic equalizer, place it between the amplifier and the tape deck.



3. Position the units in a straight column to avoid twisting and breaking the direct connectors.
4. If this unit is installed in a rack, first make the direct connector connections.

■ LOCATION OF CONTROLS



- The power supply for this unit varies depending upon the areas. Also, the parts used for power supply are different. So, refer to the circuit diagram (Separate service manual : Order No. HAD84012706C9—A) and the replacement parts list.

* [XA, PA and PE] areas are provided with voltage selector.
* 240V (50/60Hz) for Australia and United Kingdom.
* 220V (50/60Hz) for Continental Europe.
* 110V/120V/220V/240V (50/60Hz) for other [XA, PA and PE] areas.
* Phono input capacitance is about 150pF.

■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

If this occurs, follow the procedure outlines below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

■ BEFORE REPAIR AND ADJUSTMENT

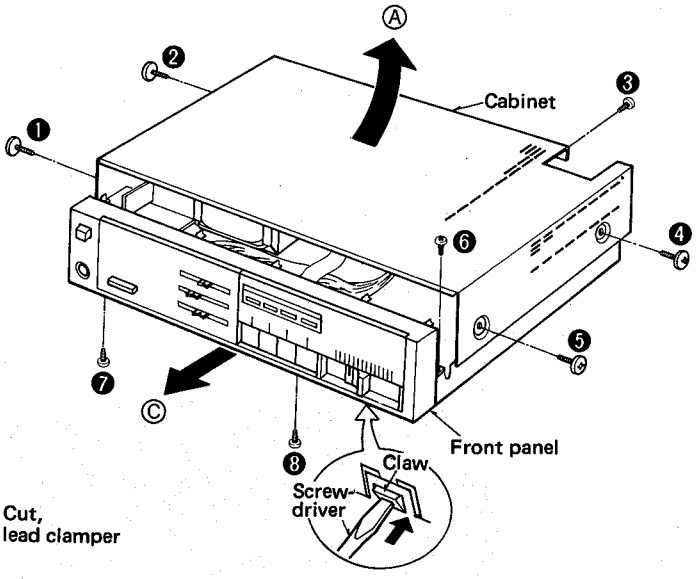
1. Turn off the power supply and short-circuit of power supply capacitors (C501 and C502, 4700μF) at resistance (about 10Ω, 5W) in order to discharge the charged voltage. Do not short between C501 and C502 by screwdriver. It may damage the component.
2. Before turning on the power supply after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current is free of abnormality. The consumed current at 60Hz/50Hz in no signal mode is shown below with respect to supply voltage 110V/120V/220V/240V.

Power supply voltage		AC110V	AC120V	AC220V	AC240V
Cousumed current	50 Hz	115 ~ 225mA	110 ~ 220mA	60 ~ 120mA	55 ~ 115mA
	60 Hz	110 ~ 220mA	100 ~ 215mA	55 ~ 115mA	50 ~ 110mA

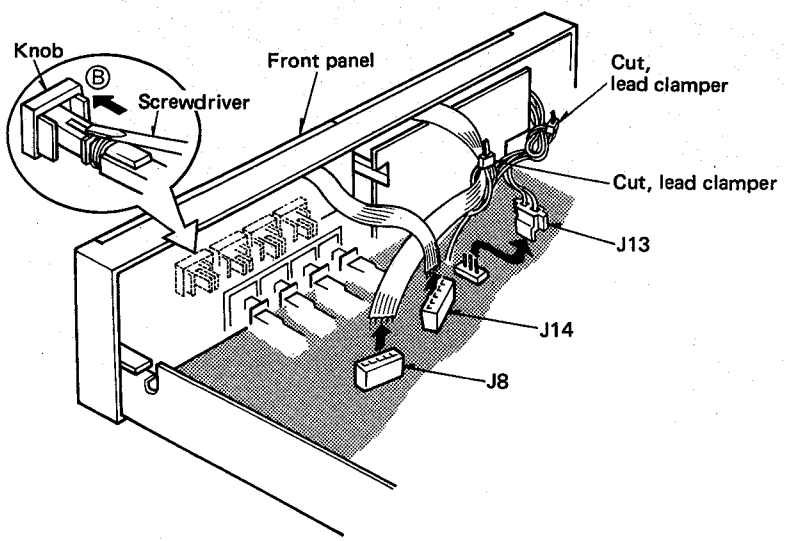
■ DISASSEMBLY INSTRUCTIONS

- **How to remove the cabinet and front panel**

(1) Remove the 5 setscrews (Fig. 1: ❶ ~ ❺) of the cabinet.
(2) Raise the cabinet in the direction of the arrow Ⓐ of Fig. 1.
(3) Remove the 3 setscrews (Fig. 1: ❻ ~ ❽) of the front panel.
(4) Remove the 4 selector knobs by pushing it in the direction of arrow Ⓑ with a screwdriver. (Fig. 2.)
(5) Cut off the lead clamper. (Fig. 2.)
(6) Remove the 3 connector (Fig. 2: J8, J13, J14) from main circuit P.C.B.
(7) Release the 2 claws from the bottom of the front panel by use of a screwdriver, and pull out in the direction of the arrow Ⓒ of Fig. 1.



[Fig. 1]



[Fig. 2]

ORDER NO. HAD84012706C9–A

DEUTSCH

Stereo Integrated Amplifier SU-5A/SU-5A(K)

- This booklet contains the specifications for SU-5A, written Germany, French and Spanish, and the circuits to be changed according to areas.
- File this manual together with the SU-5A service manual (Order No. HAD84012706C9).
- Diese Broschüre enthält die technischen Daten für SU-5A in deutscher, französischer und spanisher Sprache, sowie die entsprechend dem Gebiet zu änderenden Schaltungen.
- Bewahren Sie das Büchlein zusammen mit der Bedienungsanleitung für SU-5A (Bestell-Nr. HAD84012706C9).
- Cette brochure contient les spécifications pour le SU-5A, écrites en allemand, en français et en espagnol, et explique les circuits devant être modifiés selon les regions.
- Classer ce manuel en même temps qu'avec le manuel de service du SU-5A (N° d'ordre: HAD84012706C9).
- Este librito contiene las especificationes para SU-5A, escritas en alemán, francés y español, y los circuits a cambiarse según las áreas.
- Guardar este manual juntamente con el manual de servicio de SU-5A (pedido N°. HAD84012706C9).

DEUTSCH

■ TECHNISCHE DATEN (Spezifikationen Können infolge von Verbesserungen ohne Ankündigung geändert werden.)

(DIN 45 500)

■ VERSTÄRKERTEIL

Dauerton-Ausgangsleistung bei 40 Hz ~ 20 kHz	
beide Kanäle ausgesteuert	2 × 25W (8 Ω)
Dauerton-Ausgangsleistung bei 1 kHz	
beide Kanäle ausgesteuert	2 × 30W (8 Ω)
Gesamtklirrfaktor	
Nennleistung bei 40 Hz ~ 20 kHz	0,8% (8 Ω)
Nennleistung bei 1 kHz	0,8% (8 Ω)
halbe Nennleistung bei 1 kHz	0,05% (8 Ω)
Intermodulationsfaktor	
Nennleistung bei 60 Hz: 7 kHz = 4:1, nach SMPTE, 8 Ω	0,8%
Leistungsbandbreite	
beide Kanäle ausgesteuert bei –3 dB	10 Hz ~ 25 kHz (8 Ω)
Restbrumm und Geräusch	0,5 mV
Dämpfungsfaktor	27 (8 Ω)
Eingangsempfindlichkeit und -impedanz	
Phono	2,5 mV/47 kΩ
Tuner, AUX/CD/VIDEO	150 mV/22 kΩ
Tape/Ext	150 mV/22 kΩ
Maximale TA-Eingangsspannung (1 kHz, eff.)	150 mV
Geräuschabstand	
Nennleistung (8 Ω)	
Phono	77 dB (nach IHF, A: 81 dB)
Tuner, AUX/CD/VIDEO, Tape/Ext	88 dB (nach IHF, A: 95 dB)
Klangregler	
Baßregler (BASS)	50 Hz, +10 dB ~ –10 dB
Höhenregler (TREBLE)	20 kHz, +10 dB ~ –10 dB
Frequenzgang	
Phono	RIAA-Standardkurve ±0,8 dB (30 Hz ~ 15 kHz)
Tuner, AUX/CD/VIDEO, Tape/Ext	10 Hz ~ 60 kHz (–3 dB)
Ausgangsspannung	
Aufnahmeausgang (REC OUT)	150 mV
Kanalabweichung (AUX/CD/VIDEO, 250 Hz ~ 6300 Hz)	±1,0 dB
Übersprechdämpfung (AUX/CD/VIDEO, 1 kHz)	45 dB
Kopfhörerpegel und -impedanz	450 mV/270 Ω
Lautsprecherimpedanz	8 Ω ~ 16 Ω

■ ALLGEMEINE DATEN

Leistungsaufnahme	160 W
Netzspannung	Wechselstrom 50 Hz/60 Hz, 220V
Abmessungen (B×H×T)	315 × 75 × 248 mm
Gewicht	3,8 kg

Bemerkung:
Der Gesamtklirrfaktor wurde mit einem digitalen Rauschspektrometer (Anlage H.P. 3045) gemessen.

FRANÇAIS

■ CARACTERISTIQUES (Sujet á changement sans prearis.)

(DIN 45 500)

■ SECTION AMPLIFICATEUR

Puissance de sortie continue de 40 Hz~20 kHz,
les deux canaux en circuit 2 × 25W (8Ω)
Puissance de sortie continue à 1 kHz
les deux canaux en circuit 2 × 30W (8Ω)
Distorsion harmonique totale
à puissance nominale (40 Hz~20 kHz) 0,8% 8Ω)
à puissance nominale (1 kHz) 0,8% (8Ω)
à demi-puissance (1 kHz) 0,05% (8Ω)
Distorsion d'intermodulation
à puissance nominale à 60 Hz: 7 kHz=4:1, SMPTE, 8Ω 0,8%
Réponse de fréquences
les deux canaux en circuit, −3 dB 10 Hz~25 kHz (8Ω)
Bruit et ronflement résiduels 0,5 mV
Coefficient d'amortissement 27 (8Ω)
Sensibilité et impédance d'entrée
PHONO 2,5 mV/47kΩ
SYNTONISATEUR, AUX/CD/VIDEO (TUNER, AUX/CD/VIDEO) 150 mV/22kΩ
BANDE (TAPE/EXT) 150 mV/22kΩ
PHONO (tension d'entrée maximum, 1 kHz RMS) 150 mV
Signal/Bruit
à puissance nominale (8Ω)
PHONO 68 dB (IHF, A: 72 dB)
SYNTONISATEUR, AUX/CD/VIDEO, BANDE (TUNER, AUX/CD/VIDEO, TAPE/EXT) 88 dB (IHF, A: 95 dB)
Réglage de la tonalité
BASSES (BASS) 50 Hz, +10 dB~ −10 dB
AIGUS (TREBLE) 20 kHz, +10 dB~ −10 dB
Réponse de fréquence
PHONO Courbe nominale RIAA ±0,8 dB (30 Hz~15 kHz)
SYNTONISATEUR, AUX/CD/VIDEO, BANDE (TUNER, AUX/CD/VIDEO, TAPE/EXT) 10 Hz~60 kHz (−3 dB)
Tension de sortie
SORTIE ENREGISTREMENT (REC OUT) 150 mV
Equilibrage des canaux, AUX/CD/VIDEO 250 Hz~6 300 Hz ±1,0 dB
Séparation des canaux, AUX/CD/VIDEO 1 kHz 45 dB
Niveau de sortie des casques et impédance 450 mV/270Ω
Impédance de charge 8Ω~16Ω

■ DIVERS

Consommation 160W
Alimentation
Pour l'Europe CA 50 Hz/60 Hz, 220V
Autres CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (L×H×Pr) 315 × 75 × 248 mm
Poids 3,8 kg

Remarques:
1. On mesure la distorsion harmonique totale au moyen d'un analyseur de spectre digital (Système H.P. 3045).
2. La Société NATIONAL-PANASONIC-FRANCE, importateur du matériel MATSUSHITA-ELECTRIC déclare que cet appareil est conforme aux prescriptions de la directive 76/889/C.E.E. (arrêté 14 Janvier 1980).

ESPAÑOL

■ ESPECIFICACIONES (Estas especificaciones están sujetas a cualquier cambio sin previo eviso.)

(DIN 45 500)

■ SECCION AMPLIFICADOR

Potencia continua de 40 Hz~20 kHz
en ambos canales 2 × 25W (8Ω)
Potencia continua de 1 kHz
en ambos canales 2 × 30W (8Ω)
Distorsión armónica total
potencia de régimen a 40 Hz~20 kHz 0,8% (8Ω)
potencia de régimen a 1 kHz 0,8% (8Ω)
mitad de potencia a 1 kHz 0,05% (8Ω)
Distorsión por intermodulación
potencia de régimen a 60 Hz: 7 kHz=4:1, SMPTE, 8Ω 0,8%
Ancho de banda de potencia
con ambos canales, −3 dB 10 Hz~25 kHz (8Ω)
Zumbido residual y ruido 0,5 mV
Factor de amortiguamiento 27 (8Ω)
Sensibilidad e impedancia de entrada
TOCADISC. (PHONO) 2,5 mV/47kΩ
SINTON., AUX./CD/VIDEO (TUNER, AUX/CD/VIDEO) 150 mV/22kΩ
GRAB. (TAPE/EXT) 150 mV/22kΩ
Voltaje máximo de entrada de PHONO (1 kHz, RMS) 150 mV
Relación de señal a ruido
potencia de régimen (8Ω)
TOCADISC. (PHONO) 68 dB (IHF, A: 72 dB)
SINTON., AUX./CD/VIDEO, GRAB. (TUNER, AUX/CD/VIDEO, TAPE/EXT) 88 dB (IHF, A: 95 dB)

Controles de tono	
BAJOS (BASS)	50 Hz, +10 dB~ −10 dB
AGUDOS (TREBLE)	20 kHz, +10 dB~ −10 dB
Respuesta de frecuencia	
TOCADISC. (PHONO)	curva RIAA estándar ±0,8 dB (30 Hz~15 kHz)
SINTON., AUX./CD/VIDEO, GRAB. (TUNER, AUX/CD/VIDEO, TAPE/EXT)	10 Hz~60 kHz (−3 dB)
Voltaje de salida	
SAL. GRAB. (REC OUT)	150 mV
Equilibrio de canales, AUX/CD/VIDEO 250 Hz~6 300 Hz	±1,0 dB
Separación de canales, AUX/CD/VIDEO 1 kHz	45 dB
Impedancia y nivel de salida de los auriculares	450 mV/270Ω
Impedancia de carga	8Ω~16Ω

■ GENERAL

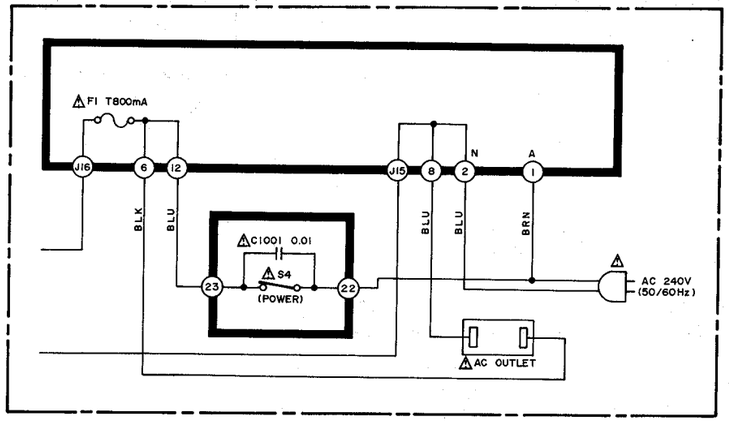
Consumo de energía	160W
Alimentación de energía	
Para Europa continental	CA 50 Hz/60 Hz, 220V
Para otros paises	CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensiones (An.×Al.×Prof.)	315 × 75 × 248 mm
Peso	3,8 kg

Nota:
La distorsión armónica total se mide con el analizador de espectro digital (sistema H.P. 3045).

■ CIRCUITS TO BE CHANGED AND THE AREAS

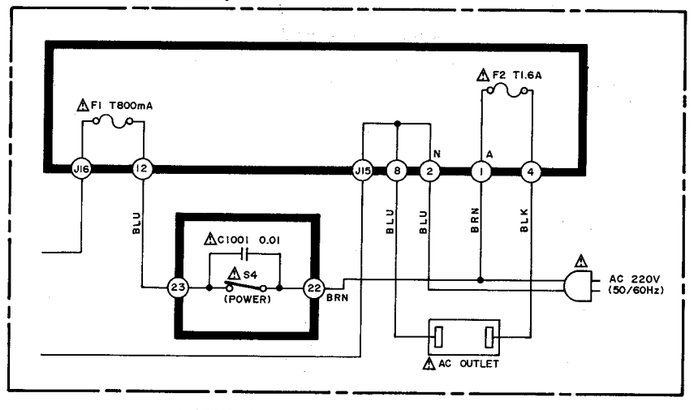
- **Power source circuit**

Product for [EK] only



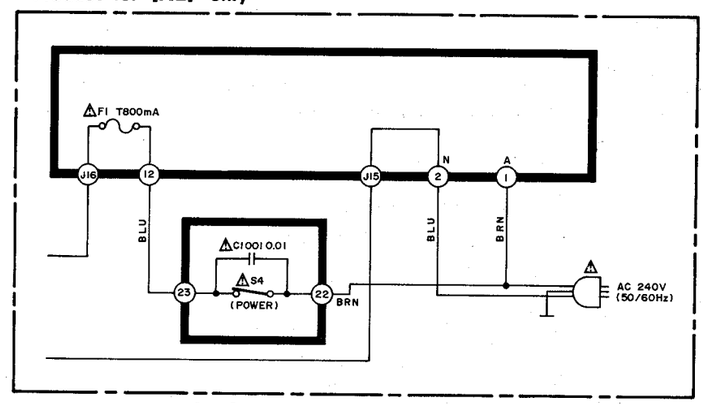
*** [EK] is available in United Kingdom.**

Product for [EW] only



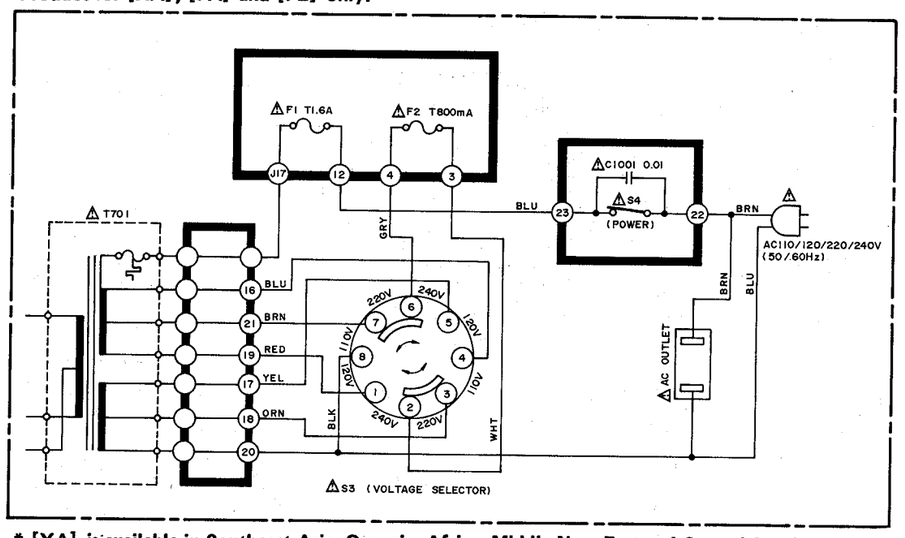
*** [EW] is available in Switzerland.**

Product for [XL] only



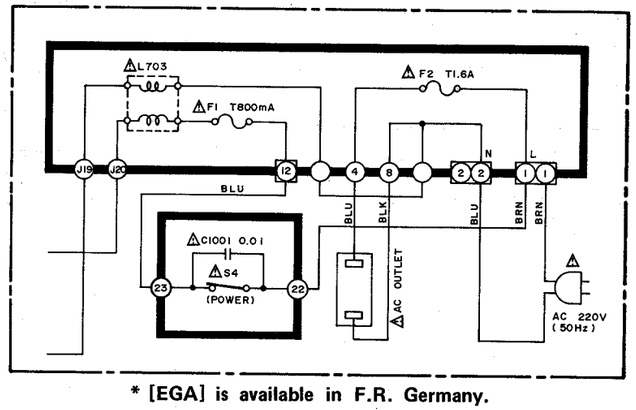
*** [XL] is available in Australia.**

Product for [XA], [PA] and [PE] only.



*** [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.**
*** [PA] is available in Far East PX.**
*** [PE] is available in European Military.**

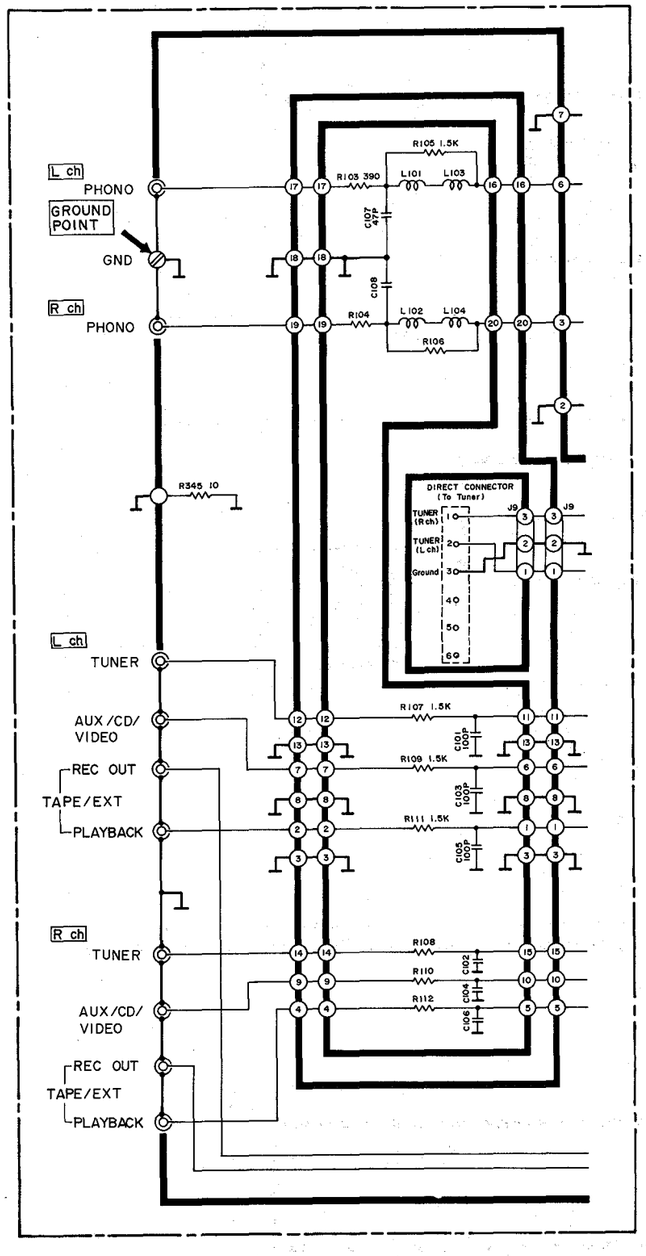
Product for [EGA] only



*** [EGA] is available in F.R. Germany.**

• Input terminal circuit

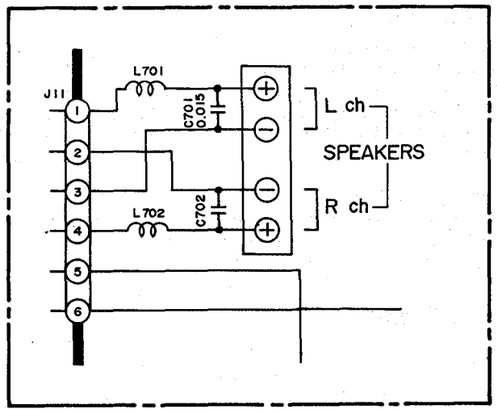
Product for [EGA] only



*** [EGA] is available in F.R. Germany.**

• Speaker terminal circuit

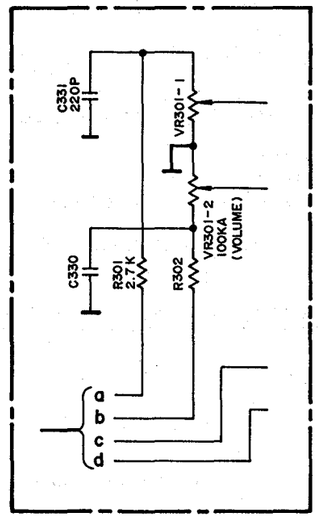
Product for [EGA] only



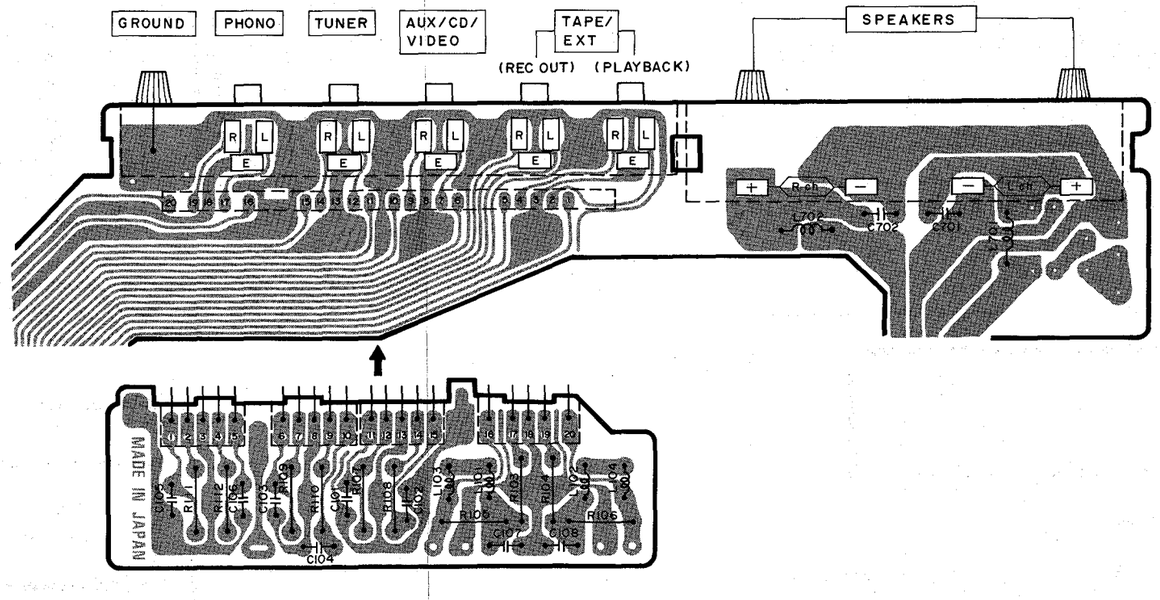
*** [EGA] is available in F.R. Germany.**

• Volume circuit

Product for [EGA] only



*** [EGA] is available in F.R. Germany.**



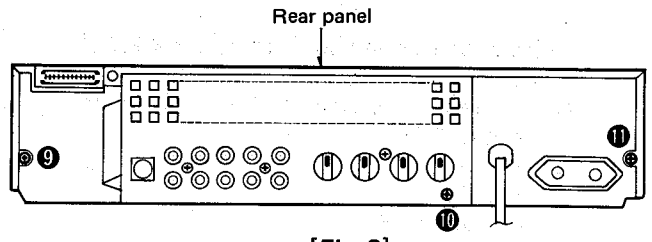
Printed in Japan
840108100 Ⓚ SH

• How to remove the main circuit P.C.B.

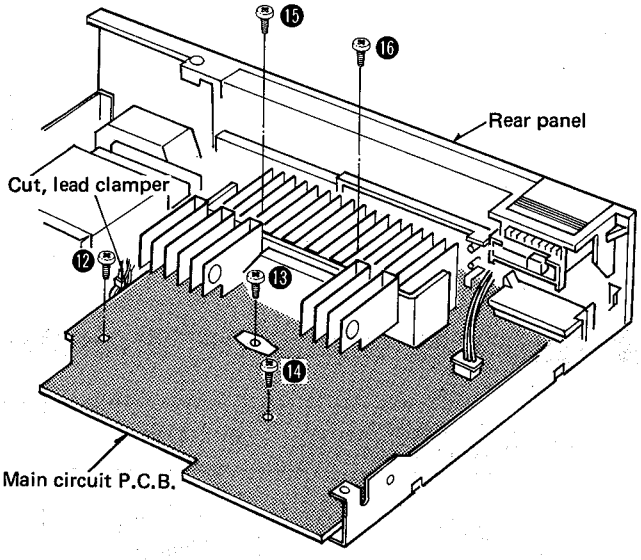
(1) Remove the cabinet, and front panel.
(2) Remove the 3 setscrews (Fig. 3: ❾ ~ ⓫) of the rear panel.
(3) Remove the 5 setscrews (Fig. 4: ⓬ ~ ⓰) of the main circuit P.C.B. and cut off the power transformer lead clamper by use of nippers.
(4) Slightly shift the rear panel backward. Next, push the main circuit P.C.B. toward the power transformer and raise the main P.C.B. in the direction of the arrow (Fig. 5: Ⓓ).

• How to remove the power amplifier IC.

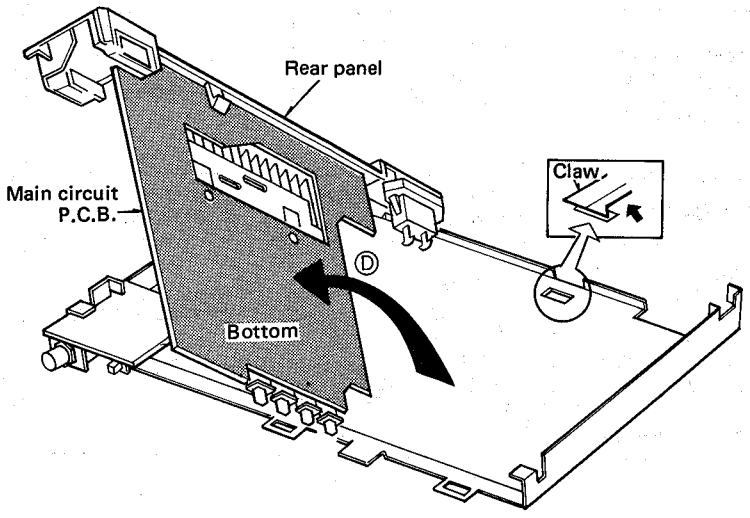
(1) Remove the cabinet and front panel.
(2) Remove the main circuit P.C.B.
(3) Unsolder of Power amplifier IC.
(4) Remove the 2 lock pins (Fig. 6: ⓱ , ⓲) and 2 set-screws (Fig. 6: ⓳ , ⓴) of heat sink, and then pull the power IC.
(5) When mounting the power amplifier IC, apply silicone compound (SZZ0L15) to the rear side of power amplifier IC, and then follow the steps 1 ~ 4 reversely.



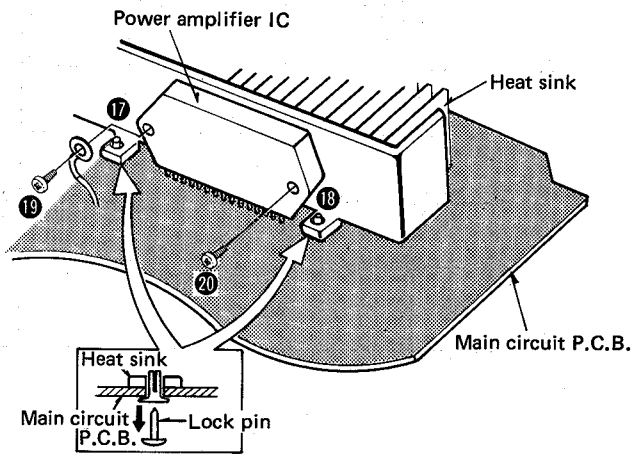
[Fig. 3]



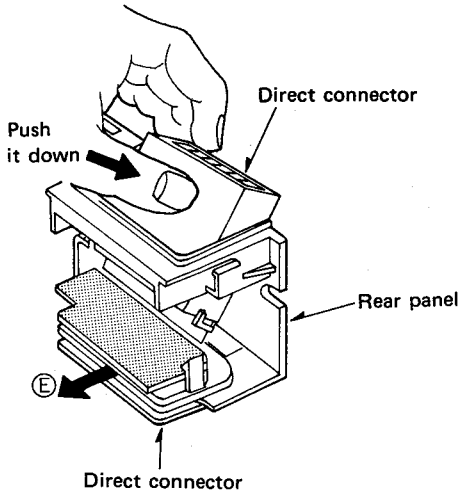
[Fig. 4]



[Fig. 5]



[Fig. 6]



[Fig. 7]

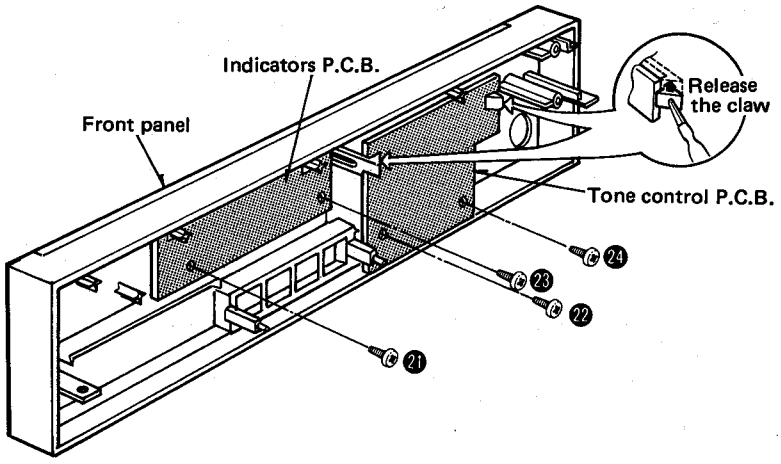
• How to remove the direct connector

(tuner side)

(1) Remove the cabinet and main circuit P.C.B.
(2) Remove the direct connector (cassette deck side) in the direction of the arrow (Fig. 7: Ⓔ).
(3) Push the direct connector (tuner side) down out of the frame as shown in Fig. 7.
(4) To set it up, follow the procedure reversely.

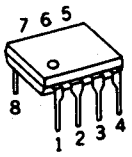
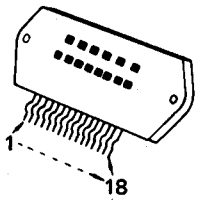
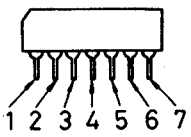
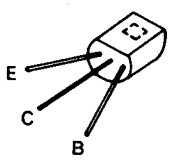
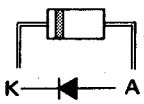
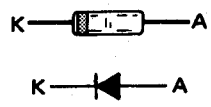
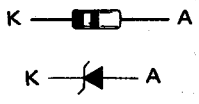
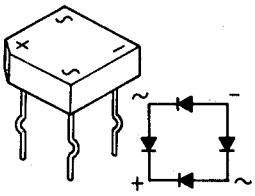
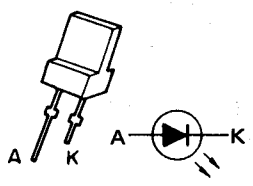
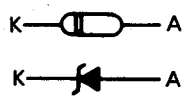
- **How to remove the tone control P.C.B.**

(1) Remove the cabinet and front panel.
(2) Remove the 4 setscrews (Fig. 8: ㉑ ~ ㉔) of the P.C.B.
(3) Release the claws from the front panel. (Fig. 8).
(4) Pull out the P.C.B.

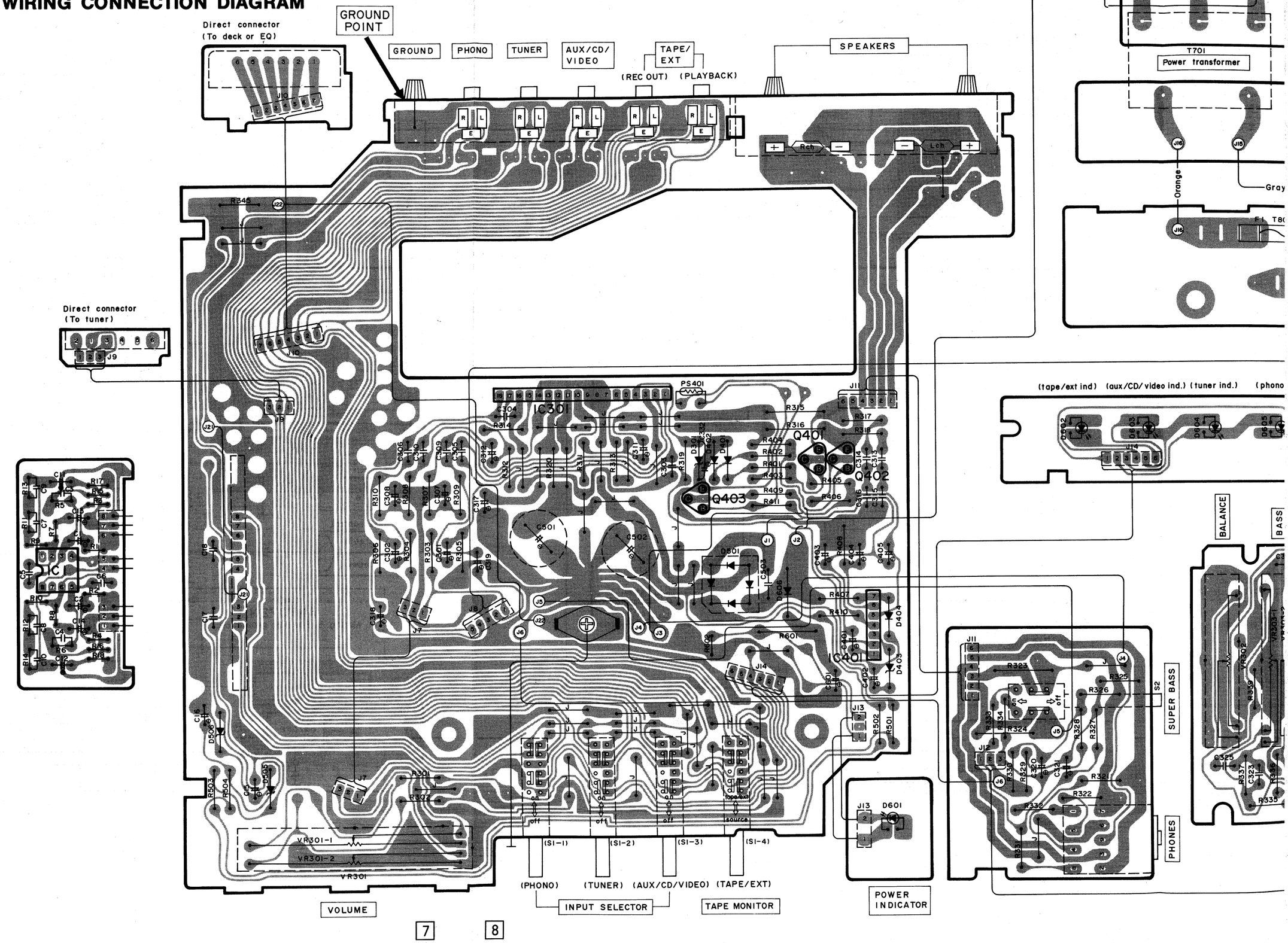


[Fig. 8]

■ TERMINAL GUIDE OF TRANSISTORS, DIODES AND IC'S

SVINJM2043DD SVINJ4559DDM	SVIK4141-2M	AN7072N	2SA992, 2SA1015	SVDSR1K2
				
MA150	MA1150M	SVDS4VB20	LN224RP, LN346GP, LN446YP	SVDMZ309A SVDMZ306A
				

■ CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM



M

GROUND POINT

GROUND | PHONO | TUNER | AUX/CD/ VIDEO | TAPE/ EXT (REC OUT) (PLAYBACK) | SPEAKERS

R L E

Rch Lch

T701 Power transformer

J1 J3 J2 J16 J15

AC 220V (50/60Hz) AC OUTLET (UNSWITCHED)

Black Blue

Orange Gray

F1 T800mA

J16 J15 2 N 1 3 A R1001

(tape/ext ind) (aux/CD/ video ind.) (tuner ind.) (phono ind.)

D602 D603 D604 D605

PS401 IC301 J11

Q401 Q402 Q403

C501 C502 C503 C401 D601 D404 D405

J1 J2 J3 J4 J5 J6 J7 J8 J22 J14 J13

R301 R302 R301-1 R301-2 VR301

(SI-1) (SI-2) (SI-3) (SI-4)

on off

(PHONO) (TUNER) (AUX/CD/VIDEO) (TAPE/EXT)

VOLUME | INPUT SELECTOR | TAPE MONITOR

J13 D601

POWER INDICATOR

J11 J4 J8 J12 J6 S2 SUPER BASS PHONES

BALANCE BASS TREBLE

VR302 VR303-1 VR303-2 VR304-1 VR304-2

Brown Blue

C1001 22 23 (S4)

POWER

7 8 9

■ RESISTORS & CAPACITORS

Notes:

1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
3. The "Ⓢ" mark is service standard parts and may differ from production parts.
4. The unit of resistance is Ω (ohm). K = 1000Ω, M = 1000kΩ.
5. The unit of capacitance is μF (microfarad). P = 10^{-6} μF.

Numbering System of Resistor

Example

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value
ERG	2	AN	J	2R2
Type	Wattage	Shape	Tolerance	Value

Resistor Type	Wattage	Tolerance
ERD : Carbon	10 : 1/8W	J : ± 5%
ERG : Metal Oxide	25 : 1/4W	G : ± 2%
ERX : Metal Film	1 : 1W	K : ±10%
ERO : Metal Film	S1 : 1/2W	
ERC : Solid	12 : 1/2W	

ERD10TLJ□□□ → Chip type carbon.
ERO10MKG□□□ → Chip type metal film.

Numbering System of Capacitor

Example

ECKD	1H	103	Z	F	ECEA	50	M	R47	R
Type	Voltage	Value	Tolerance	Peculiarity	Type	Voltage	Peculiarity use	Value	Special use

Capacitor Type	Voltage: ECEA Type	Voltage: Others	Tolerance
ECEA : Electrolytic	1A : 10V	1H : 50V DC	C : ± 0.25pF
ECET : Electrolytic	1C : 16V	KC : 400V AC	K : ± 10%
ECEA...N : Non Polar Electrolytic	1E : 25V		Z : +80%, −20%
ECCD : Ceramic	1H : 50V		P : +100%, −0%
ECKD : Ceramic	50 : 50V		
ECQM : Polyester			
ECQE : Polyester			

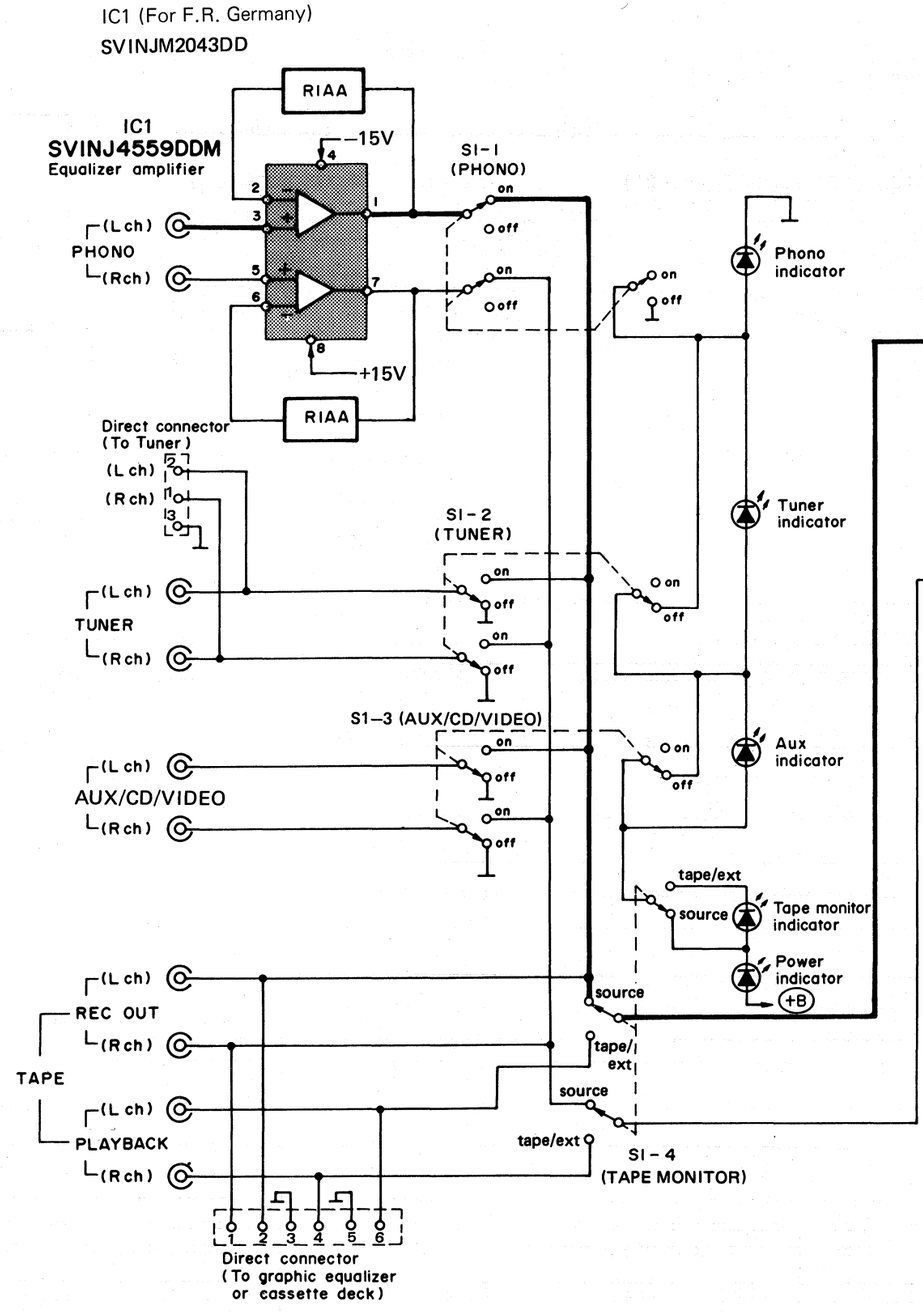
● RESISTOR

Ref. No.	Part No.	Value
R1,2	ERD10TLJ391U	390
R3,4	ERD10MKG2213	221K
R5,6	ERD10MKG5622	5.6K
R7,8	ERD10TLJ271U	270
R9,10	ERD10TLJ680U	68
R11,12	ERD10TLJ184U	180K
R13,14	ERD10TLJ123U	12K
R15,16	ERD10TLJ563U	56K
R17,18	ERD10TLJ102U	1K
R103,104 Ⓢ (EGA) only	ERD25FJ391	390
R105,106 Ⓢ (EGA) only	ERD25FJ152	1.5K
R107,108 Ⓢ (EGA) only	ERD25FJ152	1.5K
R109,110 Ⓢ (EGA) only	ERD25FJ152	1.5K
R111,112 Ⓢ (EGA) only	ERD25FJ152	1.5K
R301,302 Ⓢ	ERD25FJ272	2.7K
R303,304 Ⓢ	ERD25FJ102	1K
R305,306 Ⓢ	ERD25TJ393	39K
R307,308 Ⓢ	ERD25TJ273	27K
R309,310 Ⓢ	ERD25TJ393	39K
R311,312 Ⓢ⚠	ERD25FJ222	2.2K
R313,314 Ⓢ⚠	ERD25FJ222	2.2K
R315,316 Ⓢ	ERX1ANJR22	0.22
R317,318 Ⓢ⚠	ERD25FJ120	12
R319 ⚠	ERDS1FJ102	1K
R320 Ⓢ⚠	ERD25FJ101	100
R321,322 ⚠	ERDS1FJ271	270
R323,324 Ⓢ	ERX1ANJR22	0.22
R325,326 Ⓢ	ERD25FJ152	1.5K
R327,328 Ⓢ	ERD25TJ153	15K
R329,330 Ⓢ⚠	ERD25FJ820	82
R331,332 Ⓢ	ERD25TJ333	33K
R333,334 Ⓢ	ERD25FJ681	680
R335,336 Ⓢ	ERD25TJ223	22K
R337,338 Ⓢ	ERD25TJ154	150K
R339,340 Ⓢ	ERD25FJ472	4.7K
R341,342 Ⓢ	ERD25FJ472	4.7K
R343,344 Ⓢ	ERD25FJ102	1K
R345 Ⓢ	ERD25FJ100	10
R401,402 Ⓢ	ERD25TJ153	15K
R403,404 Ⓢ	ERD25FJ331	330
R405,406 Ⓢ	ERD25FJ103	10K
R407 Ⓢ⚠	ERD25TJ393	39K
R408 Ⓢ	ERD25TJ473	47K
R409 Ⓢ	ERD25TJ104	100K
R410 Ⓢ	ERD25FJ330	33
R411 Ⓢ	ERD25TJ333	33K
R501,502 ⚠	ERDS1FJ821	820
R503,504 ⚠	ERDS1FJ821	820
R601 Ⓢ⚠	ERG1ANJ122	1.2K
R602 Ⓢ	ERD25FJ682	6.8K
R1001 Ⓢ⚠ (EX,EF,EB,EH, Ei) only	ERC12ZGK335	3.3M

● CAPACITOR

Ref. No.	Part No.	Value
C1,2 Ⓢ	ECEA50Z3R3	3.3
C3,4 Ⓢ	ECCD1H101K	100P
C5,6 Ⓢ	ECKD1H471KB	470P
C7,8	ECQM1H223KV	0.022
C9,10	ECQM1H682KV	0.0068
C11,12 ⚠	ECEA1HN010S	1
C13,14 Ⓢ	ECEA1CS330	33
C15,16 Ⓢ	ECEA1CU100	10
C17,18 Ⓢ	ECKD1H223ZF	0.022
C101,102 Ⓢ (EGA) only	ECCD1H101K	100P
C103,104 Ⓢ (EGA) only	ECCD1H101K	100P
C105,106 Ⓢ (EGA) only	ECCD1H101K	100P
C107,108 Ⓢ (EGA) only	ECCD1H470K	47P
C301,302 ⚠	ECEA1HN2R2S	2.2
C303,304 Ⓢ	ECCD1H101K	100P
C305,306 Ⓢ	ECCD1H151K	150P
C307,308	ECEA1CU220	22
C309,310 Ⓢ	ECCD1H030CC	3P
C311,312 ⚠	ECEA1EN100S	10
C313,314 Ⓢ	ECKD1H223ZF	0.022
C315,316 Ⓢ	ECKD1H223ZF	0.022
C317	ECEA1HU101	100
C318,319	ECEA1CU100	10
C320,321	ECEA1HU010	1
C322,323	ECQM1H183KV	0.018
C324,325	ECQM1H823KV	0.082
C326,327	ECQM1H182KV	0.0018
C328,329	ECQM1H183KV	0.018
C330,331 Ⓢ (EGA) only	ECCD1H221K	220P
C332 Ⓢ	ECEA1ES470	47
C401	ECEA1AU470	47
C402	ECEA1HU010	1
C403	ECEA1HG330S	33
C404	ECEA1HG4R7S	4.7
C405	ECEA1HG100S	10
C501,502 ⚠	ECETS42V472U	4700
C503 ⚠	ECQE1104KN	0.1
C601 ⚠	ECEA1HU101	100
C701,702 (EGA) only	ECQM1H153KV	0.015
C1001 ⚠	ECKDKC103PF2	0.01

■ BLOCK DIAGRAM



and may differ from

000Ω, M = 1000kΩ.
I). P = 10^{-6} μF.

lerance
: ± 5%
: ± 2%
: ±10%

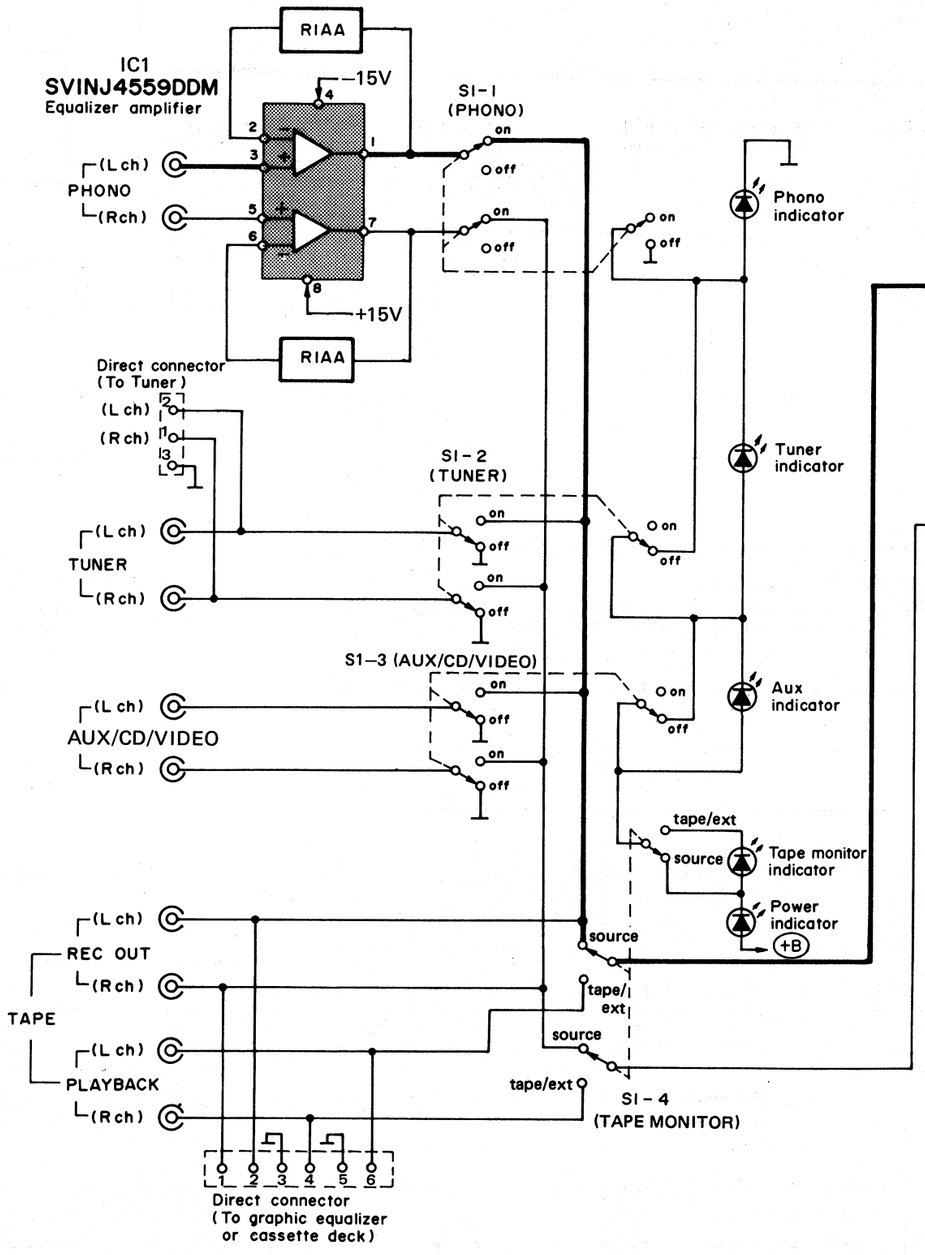
R
Special use

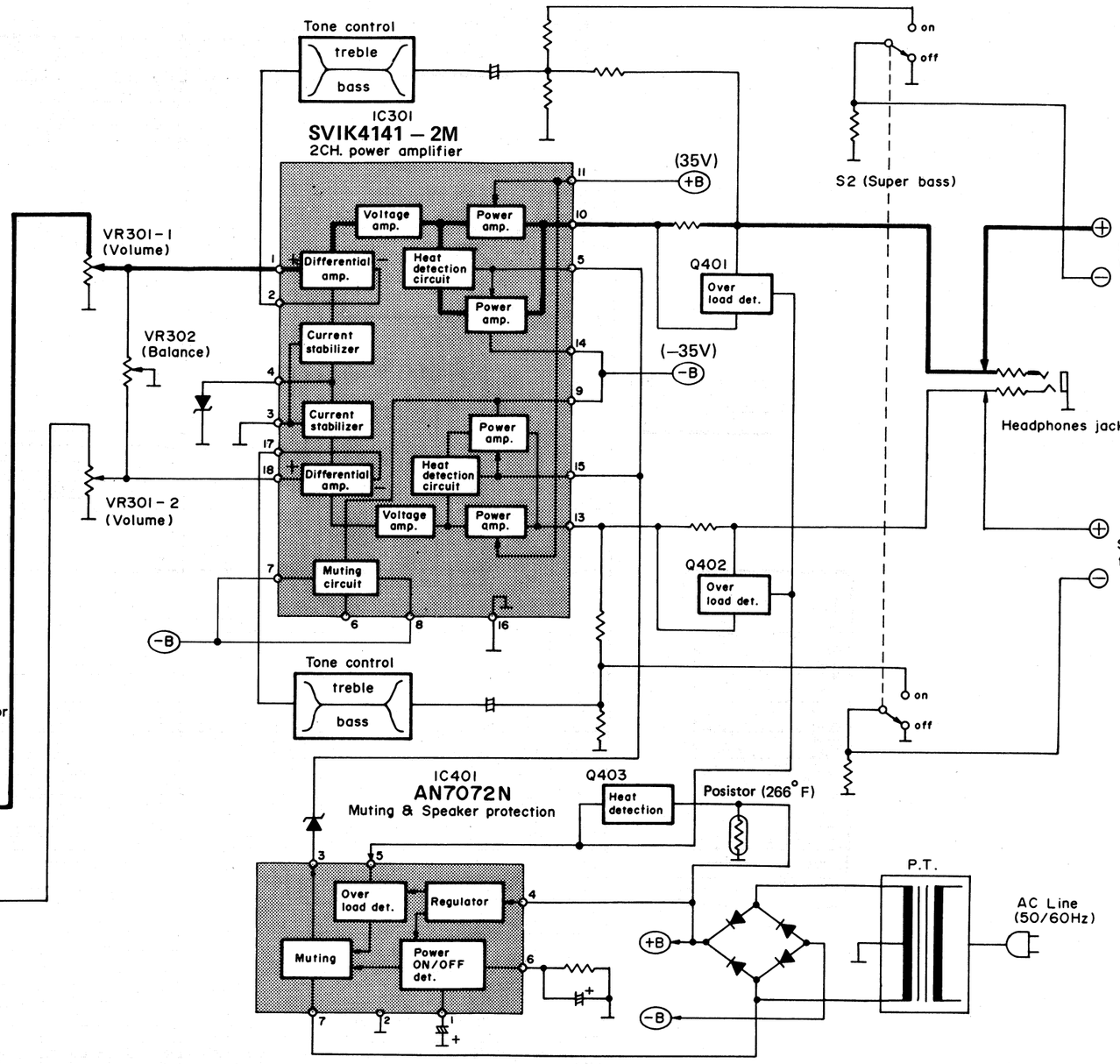
	Part No.	Value
	ERD25FJ103	10K
	ERD25TJ393	39K
	ERD25TJ473	47K
	ERD25TJ104	100K
	ERD25FJ330	33
	ERD25TJ333	33K
	ERDS1FJ821	820
	ERDS1FJ821	820
	ERG1ANJ122	1.2K
	ERD25FJ682	6.8K
	ERC12ZGK335	3.3M

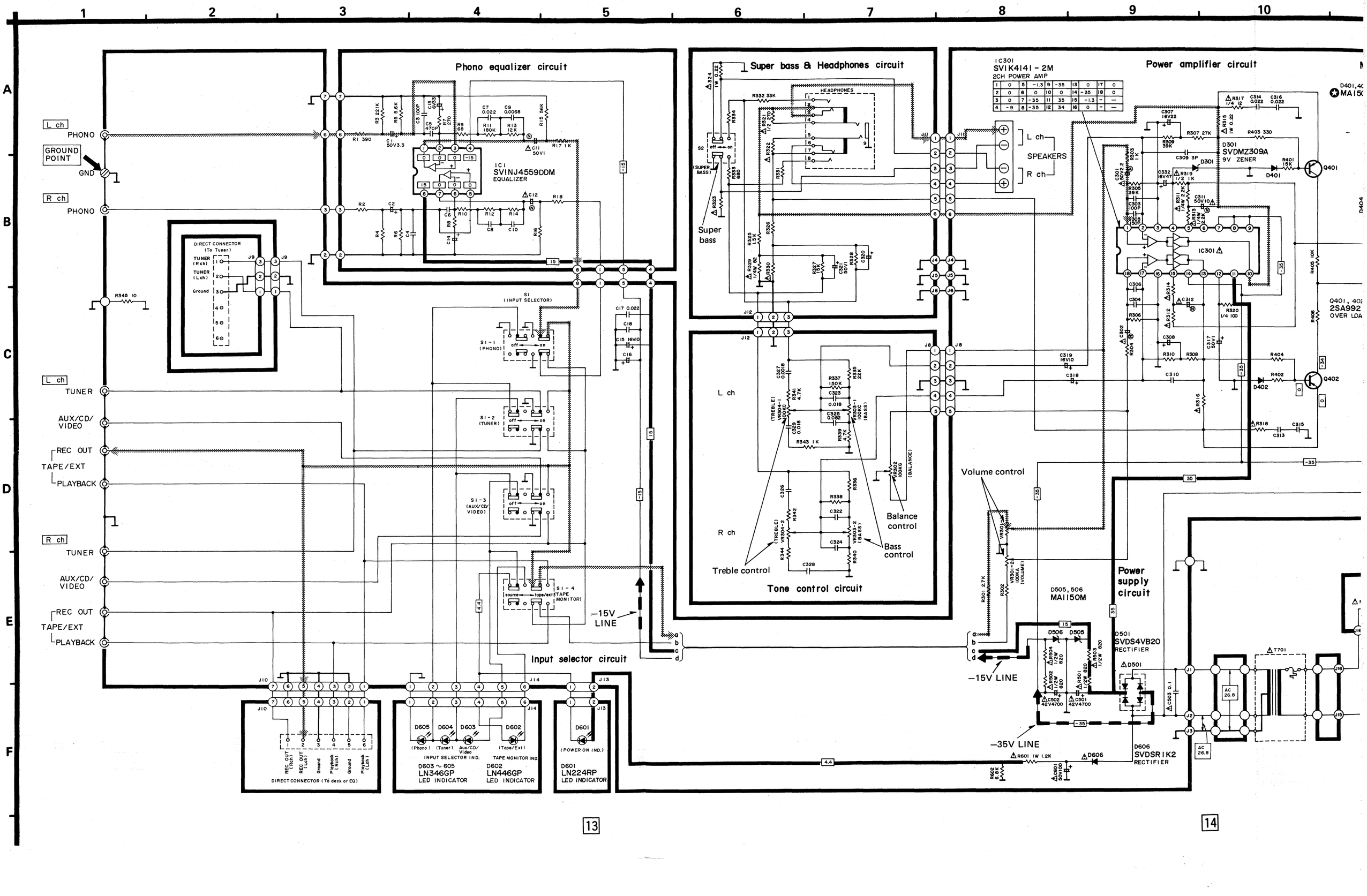
Part No.	Value
ECEA1HG330S	33
ECEA1HG4R7S	4.7
ECEA1HG100S	10
ECETS42V472U	4700
ECQE1104KN	0.1
ECEA1HU101	100
ECQM1H153KV	0.015
ECKDKC103PF2	0.01

■ BLOCK DIAGRAM

IC1 (For F.R. Germany)
SVINJM2043DD






Phono equalizer circuit
Super bass & Headphones circuit
Power amplifier circuit
IC301
SVIK4141 - 2M
2CH POWER AMP
IC1
SVINJ4559DDM
EQUALIZER
L ch
PHONO
GROUND POINT
GND
R ch
PHONO
DIRECT CONNECTOR (To Tuner)
TUNER (Rch)
TUNER (Lch)
Ground
S1
(INPUT SELECTOR)
S1-1 (PHONO)
S1-2 (TUNER)
S1-3 (AUX/CD/ VIDEO)
S1-4 (TAPE MONITOR)
L ch
TUNER
AUX/CD/ VIDEO
REC OUT
TAPE/EXT
PLAYBACK
R ch
TUNER
AUX/CD/ VIDEO
REC OUT
TAPE/EXT
PLAYBACK
-15V LINE
Input selector circuit
HEADPHONES
SPEAKERS
L ch
R ch
Super bass
(SUPER BASS)
Tone control circuit
Treble control
Bass control
Balance control
Volume control
D301
SVDMZ309A
9V ZENER
D401, 40
MA15
Q401, 40
2SA992
OVER LOA
Power supply circuit
D505, 506
MA1150M
D501
SVDS4VB20
RECTIFIER
D606
SVDSR1K2
RECTIFIER
-35V LINE
DIRECT CONNECTOR (To deck or EQ)
REC OUT (Rch)
REC OUT (Lch)
Ground
Playback (Rch)
Ground
Playback (Lch)
D605 ~ 605
LN346GP
LED INDICATOR
INPUT SELECTOR IND.
D602
LN446GP
LED INDICATOR
TAPE MONITOR IND.
D601
LN224RP
LED INDICATOR
(POWER ON IND.)
(Phono)
(Tuner)
Aux/CD/ Video
(Tape/Ext)

13

14

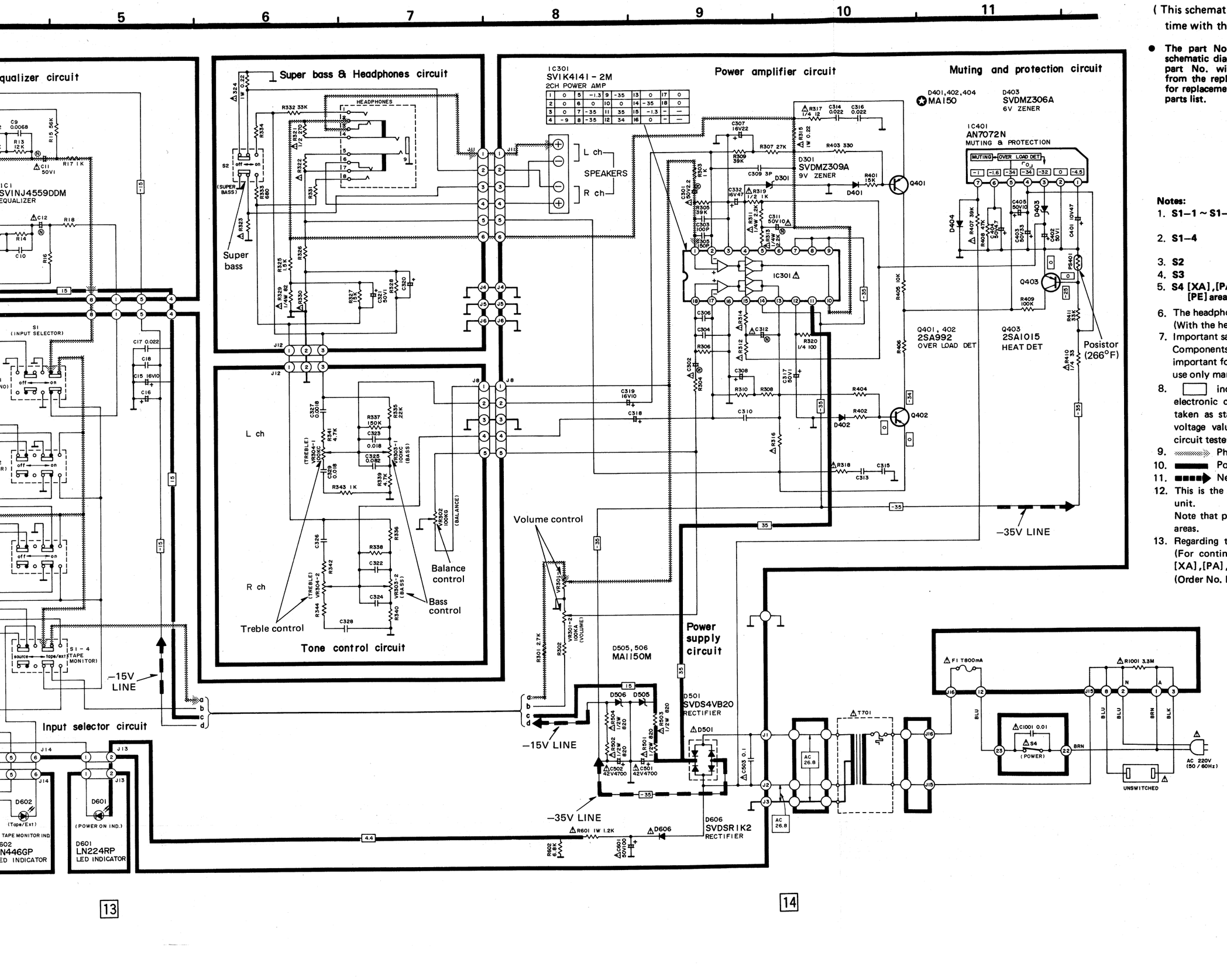
■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

- **The part No. of transistors, IC and diodes mentioned in the schematic diagram stand for production part No. Regarding the part No. with ✪ mark, the production part No. are different from the replacement part No. Therefore, when placing an order for replacement parts, please use the part No. in the replacement parts list.**

Notes:

1. **S1–1 ~ S1–3** : Input selector switch in "phono" position. (**S1–1** : phono **S1–2** : tuner **S1–3** : aux/CD/video)
2. **S1–4** : Tape monitor switch in "source" position. source ⟷ tape/ext.
3. **S2** : Super bass switch in "off" position.
4. **S3** : Power source switch in "on" position.
5. **S4 [XA],[PA],[PE] areas** : Voltage selector switch in **"110V"** position. 120V ⟷ 110V ⟷ 220V ⟷ 240V
6. The headphone jack switch is being short-circuited. (With the headphone plug not inserted)
7. Important safety notice: Components identified by △ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
8. ▭ indicated voltage values are the standard values for the DC electronic circuit tester (high impedance) with the ground point taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
9. ▒▒▒ Phono signal lines
10. ▬▬ Positive (+B) voltage lines
11. ▬▬▶ Negative (−B) voltage lines
12. This is the basic circuit diagram (For continental Europe) of this unit. Note that part of the circuit is subject to change depending on the areas.
13. Regarding the circuits to be changed in the basic circuit diagram (For continental Europe) and related areas [EK], [EW], [XL], [XA],[PA],[PE] and [EGA] refer to the separate service manual (Order No. HAD84012706C9–A).



■ REPLACEMENT PARTS LIST

Notes:

1. Part numbers are indicated on most mechanical parts. Please use this part number for parts order.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Ⓚ —marked parts are used for black only, while ○ —marked parts are for silver type only.
4. Part other than Ⓚ — and ○—marked are used for both black and silver type.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
6. The "Ⓢ"mark is service standard parts and may differ from production parts.
7. The parenthesized numbers in the column of description stand for the quantity per set.

Black type model No. : SU-5A (K).

Ref. No.	Part No.	Part Name & Description
INTEGRATED CIRCUITS		
IC1 (EGA) only	SVINJM2043DD	Equalizer
IC1 other areas	SVINJ4559DDM	Equalizer
IC301	SVIK4141−2M	Power Amp.
IC401	AN7072N	Muting & Protection
TRANSISTORS		
Q401,402	2SA992	Regulator
Q403	2SA1015−Y	Regulator
DIODES		
D301	SVDMZ309A	9V, Zener
D401,402,404 Ⓢ	MA162A	
D403	SVDMZ306A	6V, Zener
D501 ⚠	SVDS4VB20	Rectifier
D505,506	MA1150M	15V, Zener
D601	LN224RP	L. E. D.
D602	LN446YP	L. E. D.
D603,604,605	LN346GP	L. E. D.
D606 Ⓢ⚠	SVDSR1K2	Rectifier
COILS		
L101∼104 (EGA) only	ELQS181KB	Choke, (Phono)
L701,702 (EGA) only	SLQY15G−10	Choke, (Output)
L703 (EGA) only ⚠	SLQZ650MH49	Choke, (Power Source)
TRANSFORMERS		
T1 (XA,PA,PE) only ⚠	SLT5M359	Power Source
T1 (EK, XL) only ⚠	SLT5M363	Power Source
T1 other areas ⚠	SLT5M357	Power Source
VARIABLE RESISTORS		
VR301	EWE00815A15S	Volume
VR302	EWANF5X05G15	Balance, 100kΩ(G)
VR303,304	EWANA6X05C15	Tone Control, 100kΩ(C)
THERMISTOR		
PS401	SRPBA47101	Thermal Detector
FUSES		
F1 ⚠	XBA2C08TR0	250V, T800mA
F2 (EW,EGA,XA, PA,PE) only ⚠	XBA2C16TR0	250V, T1.6A
SWITCHES		
S1	SSH451	Input Selector
S2	SSH1047	Super Bass
S3 (XA,PA,PE) ⚠ only	ESE37200	Voltage Selector
S4 ⚠	SSH1071	Power Source
CABINET and CHASSIS PARTS		
1 ○	SGWU5A−SE	Front Panel, Ass'y (Silver Type) (1)
1 Ⓚ	SGWU5A−KE	Front Panel, Ass'y (Black Type) (1)
1−1	SBD69−1T	Knob, Control Volume (3)
1−2	SHRU5A−SE	Holder, Knob (Control Volume) (3)

Ref. No.	Part No.	Part Name & Description
CABINET and CHASSIS PARTS		
2 ○	SBC607−2	Button, Input Selector Switch (4)
2 Ⓚ	SBC607−1	Button, Input Selector Switch (4)
3 ○	SGXU5A−SE	Ornament, Volume Control Knob (1)
3 Ⓚ	SGXU5A−KE	Ornament, Volume Control Knob (1)
4	SBD83−1	Knob, Volume (1)
5	SHR9685	Holder, Volume Knob (1)
6	SMX733	Insulation Cover (1)
7	SBC439	Button, Super Bass (1)
8	SBC489	Button, Power Source (1)
9	SMN1908	Bracket, P. C. B. (1)
10	SJJ71F	Jack, Headphone (1)
11 (EW,EGA,XA, PA,PE) only	SJT347	Holder, Fuse (4)
11 other areas	SJT347	Holder, Fuse (2)
12	SHG6360	Rubber, Power Transformer (1)
13 (EK) only ○	SKCU5A−SK	Cabinet, (Silver Type) (1)
13 other areas ○	SKC1640S1	Cabinet, (Silver Type) (1)
13 (EK) only Ⓚ	SKCU5A−KK	Cabinet, (Black Type) (1)
13 other areas Ⓚ	SKC1640BB1	Cabinet, (Black Type) (1)
14	SMX829	Insulation Cover (1)
15 (XA,PA,PE) only	SMN1863	Bracket, Voltage Selector Switch (1)
16	SMN1918	Bracket (1)
17 (XL) only	RJT202B	Terminal (1)
18	SDSA4121	Spring (1)
19	SMX743	Insulation Plate (1)
20	SHR411	Lock Pin (2)
21 (EX)	SKUU5A−SE	Bottom Board, Ass'y (1)
21 (EW)	SKUU5A−SW	Bottom Board, Ass'y (1)
21 (EK)	SKUU5A−SK	Bottom Board, Ass'y (1)
21 (XA,PA,PE)	SKUU5A−SX	Bottom Board, Ass'y (1)
21 (XL)	SKUU5A−SL	Bottom Board, Ass'y (1)
21 other areas	SKUU5A−SF	Bottom Board, Ass'y (1)
21−1	SHS2481	Foot (4)
22	SJS9605	Connector (1)
23	SJF3055N	Terminal Board (1)
24	SJF4437−1	Terminal Board, (Speaker) (1)
25 (EK)	SGP6150−2A	Rear Panel (1)
25 (XA,PA,PE)	SGP6150−1B	Rear Panel (1)
25 (XL)	SGP6150−4A	Rear Panel (1)
25 (EGA)	SGP6150−1C	Rear Panel (1)
25 other areas	SGP6150−1A	Rear Panel (1)
26 (EK) only ⚠	SJS9227	Socket, AC (1)
26 other areas ⚠	SJS9225	Socket, AC (1)

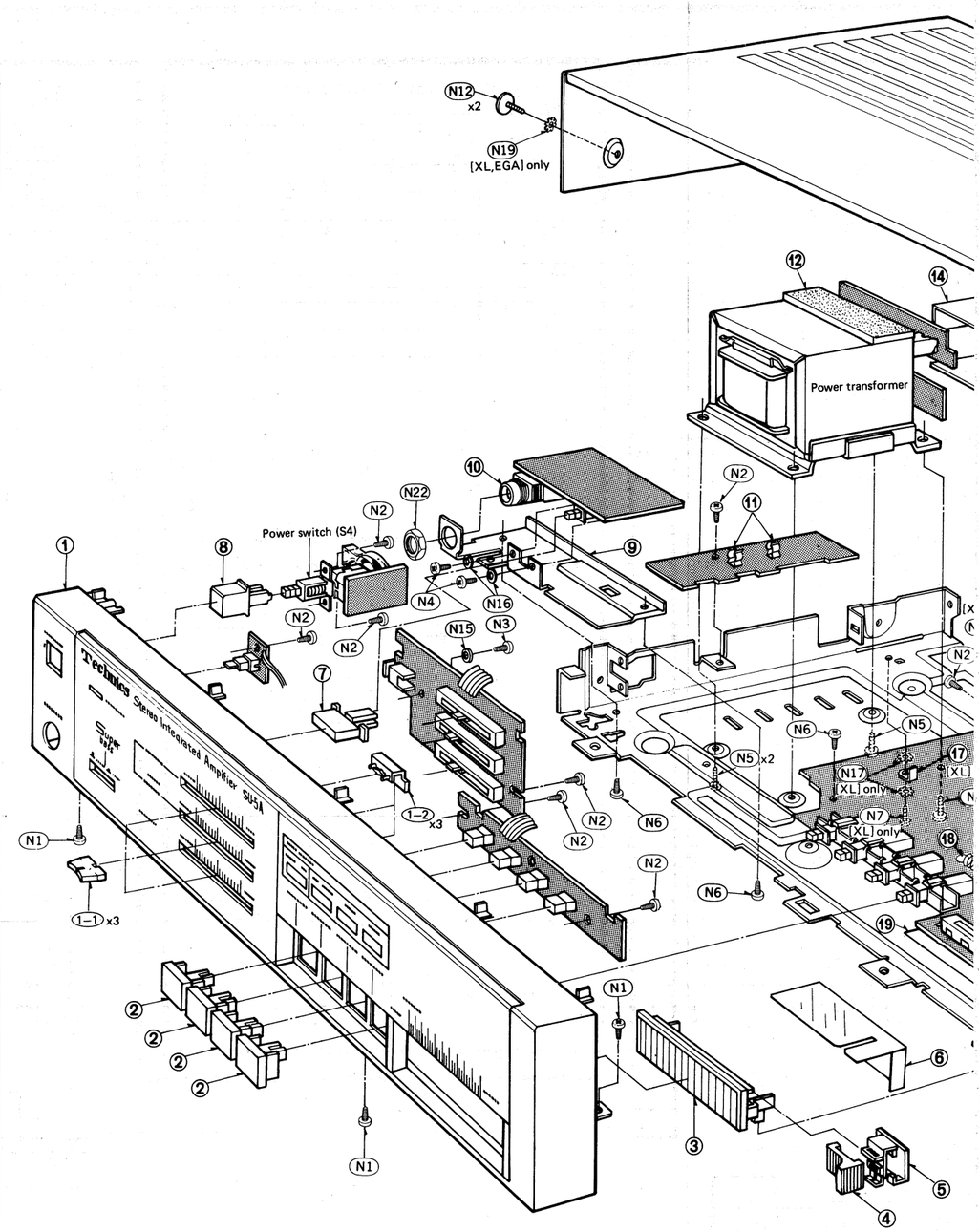
Ref. No.	Part No.	Part Name & Description
CABINET and CHASSIS PARTS		
27 (XL)	SHR131	Bushing, AC Cord (1)
27 (EK)	SHR129	Bushing, AC Cord (1)
27 other areas	SHR127	Bushing, AC Cord (1)
28 (XL) Ⓢ⚠	QFC1207MA	AC Cord (1)
28 (EK) Ⓢ⚠	QFC1205M	AC Cord (1)
28 (PA,PE) Ⓢ⚠	RJA52Z	AC Cord (1)
28 other areas ⚠	SJA138−3	AC Cord (1)
29	SJS9325	Connector (1)
30 ○	SHE135	Pin (Silver Type) (1)
30 Ⓚ	SHE135−1	Pin (Black Type) (1)
SCREWS		
N1	XTB3+8BFYR	Tapping, ⊕3×8 (3)
N2 Ⓢ	XTB3+8BFZ	Tapping, ⊕3×8 (9)
N3 Ⓢ	XTN3+8B	Tapping, ⊕3×8 (1)
N4 Ⓢ	XSN3+6S	⊕3×6 (2)
N5	XTB4+8F	Tapping, ⊕4×8 (4)
N6	XTB3+8F	Tapping, ⊕3×8 (2)
N7 (XL) only Ⓢ	XTB3+8BFZ	Tapping, ⊕3×8 (1)
N8 Ⓢ	XTB3+16BFN	Tapping, ⊕3×16 (2)
N9	XTBS3+8FFYR1	Tapping with Detent, ⊕3×8 (3)
N10 (XA,PA,PE) only Ⓢ	XSS3+6S	⊕3×6 (1)
N11 (XA,PA,PE) only Ⓢ	XSN3+6S	⊕3×6 (2)
N12 ○	SNE2095−4	(Silver Type) (4)
N12 Ⓚ	SNE2095−5	(Black Type) (4)
N13 Ⓢ	XTB3+10BFZ	Tapping, ⊕3×10 (4)
N14 Ⓢ	XTN3+10BFZ	Tapping, ⊕3×10 (2)
WASHERS		
N15 Ⓢ	XWG3	Plain, φ3 (1)
N16 Ⓢ	XWA3B	Spring, φ3 (2)
N17 (XL) only Ⓢ	XWC3B	External Toothed Lock, φ3 (2)
N18 (XA,PA,PE) only Ⓢ	XWA3B	Spring, φ3 (2)
N19 (XL,EGA) only Ⓢ	XWC3B	External Toothed Lock, φ3 (2)
N20 (EGA) only Ⓢ	XWC3B	External Toothed Lock, φ3 (2)
N21 Ⓢ	XWG3FZ	Plain, φ3 (2)
NUT		
N22 Ⓢ	XNS12	φ12 (1)
ACCESSORIES		
A1	SJP2259	Cord (1)
A2 (EK) only ⚠	SJP5219−1	Plug Adaptor (1)
A3 (XA) only ⚠	SJP5213−1	Plug Adaptor (1)
A4 (PA,PE) only ⚠	SJP9215	Plug Adaptor (1)
A5 (EGA) only ⚠	XBA2C16TR0	Fuse, 250V T1.6A (3)
A6 (EK)	SQF12019	Instruction Book (1)
A6 (EGA)	SQF12020	Instruction Book (1)
A6 (XL)	SQF12021	Instruction Book (1)
A6 (EI)	SQF12022	Instruction Book (1)
A6 (XA)	SQF12023	Instruction Book (1)
A6 (PA,PE)	SQF12024	Instruction Book (1)
A6 other areas	SQF12018	Instruction Book (1)

Ref. No.	Part No.	Part Name & Description
PACKING PARTS		
P1 ○	SPP691−1	Polyethlene Bag (Silver Type) (1)
P1 Ⓚ	SPP713	Polyethlene Bag (Black Type) (1)
P2 (XL) only	SPS4434−1	Pad, Front Side (1)
P2 other areas	SPS4434	Pad, Front Side (1)
P3 (XL) only	SPS4435−1	Pad, Rear Side (1)
P3 other areas	SPS4435	Pad, Rear Side (1)
P4 (EK) ○	SPG4825−1	Carton Box (1)
P4 (XL) ○	SPG4827	Carton Box (1)
P4 (EF) ○	SPG4829	Carton Box (1)
P4 other areas ○	SPG4825	Carton Box (1)
P4 (EK) only Ⓚ	SPG4826−1	Carton Box (1)
P4 other areas Ⓚ	SPG4826	Carton Box (1)

Areas

* [EX] is available in Scandinavia.
* [EF] is available in France.
* [EB] is available in Belgium.
* [EH] is available in Holland.
* [Ei] is available in Italy.
* [EW] is available in Switzerland.
* [EGA] is available in F.R. Germany.
* [EX] is available in United Kingdom.
* [XA] is available in Southeast Asia, Oceania, Africa, Middle Near East and Central South America.
* [XL] is available in Australia.
* [PA] is available in Far East PX.
* [PE] is available in European Military.

■ EXPLODED VIEWS



A	⑩ ⑫ ⑭
B	① ⑧ ⑦ 1−2 ⑨ ⑪ ⑱ ⑰
C	1−1 ② ② ② ② ③ ⑲ ④ ⑥ ⑤

■ EXPLODED VIEWS

eas.

No. : SU-5A (K).

o.	Part Name & Description
S PARTS	
	Bushing, AC Cord (1)
	Bushing, AC Cord (1)
	Bushing, AC Cord (1)
A	AC Cord (1)
	AC Cord (1)
	AC Cord (1)
	AC Cord (1)
	Connector (1)
	Pin(Silver Type) (1)
	Pin(Black Type) (1)
FYR	Tapping, ⊕3×8 (3)
FZ	Tapping, ⊕3×8 (9)
	Tapping, ⊕3×8 (1)
	⊕3×6 (2)
	Tapping, ⊕4×8 (4)
	Tapping, ⊕3×8 (2)
FZ	Tapping, ⊕3×8 (1)
BFN	Tapping, ⊕3×16(2)
FFYR1	Tapping with Detent, ⊕3×8 (3)
	⊕3×6 (1)
	⊕3×6 (2)
4	(Silver Type) (4)
5	(Black Type) (4)
BFZ	Tapping, ⊕3×10(4)
BFZ	Tapping, ⊕3×10(2)
	Plain, ϕ3 (1)
	Spring, ϕ3 (2)
	External Toothed Lock, ϕ3 (2)
	Spring, ϕ3 (2)
	External Toothed Lock, ϕ3 (2)
	External Toothed Lock, ϕ3 (2)
	Plain, ϕ3 (2)
	ϕ12 (1)
	Cord (1)
	Plug Adaptor (1)
	Plug Adaptor (1)
	Plug Adaptor (1)
R0	Fuse, 250V T1.6A (3)
	Instruction Book (1)
	Instruction Book (1)
	Instruction Book (1)
	Instruction Book (1)
	Instruction Book (1)
	Instruction Book (1)
	Instruction Book (1)

Ref. No.	Part No.	Part Name & Description
PACKING PARTS		
P1 ○	SPP691−1	Polyethlene Bag (Silver Type) (1)
P1 Ⓚ	SPP713	Polyethlene Bag (Black Type) (1)
P2(XL)only	SPS4434−1	Pad, Front Side (1)
P2 other areas	SPS4434	Pad, Front Side (1)
P3(XL)only	SPS4435−1	Pad, Rear Side (1)
P3 other areas	SPS4435	Pad, Rear Side (1)
P4(EK) ○	SPG4825−1	Carton Box (1)
P4(XL) ○	SPG4827	Carton Box (1)
P4(EF) ○	SPG4829	Carton Box (1)
P4 other areas ○	SPG4825	Carton Box (1)
P4(EK)only Ⓚ	SPG4826−1	Carton Box (1)
P4 other areas Ⓚ	SPG4826	Carton Box (1)

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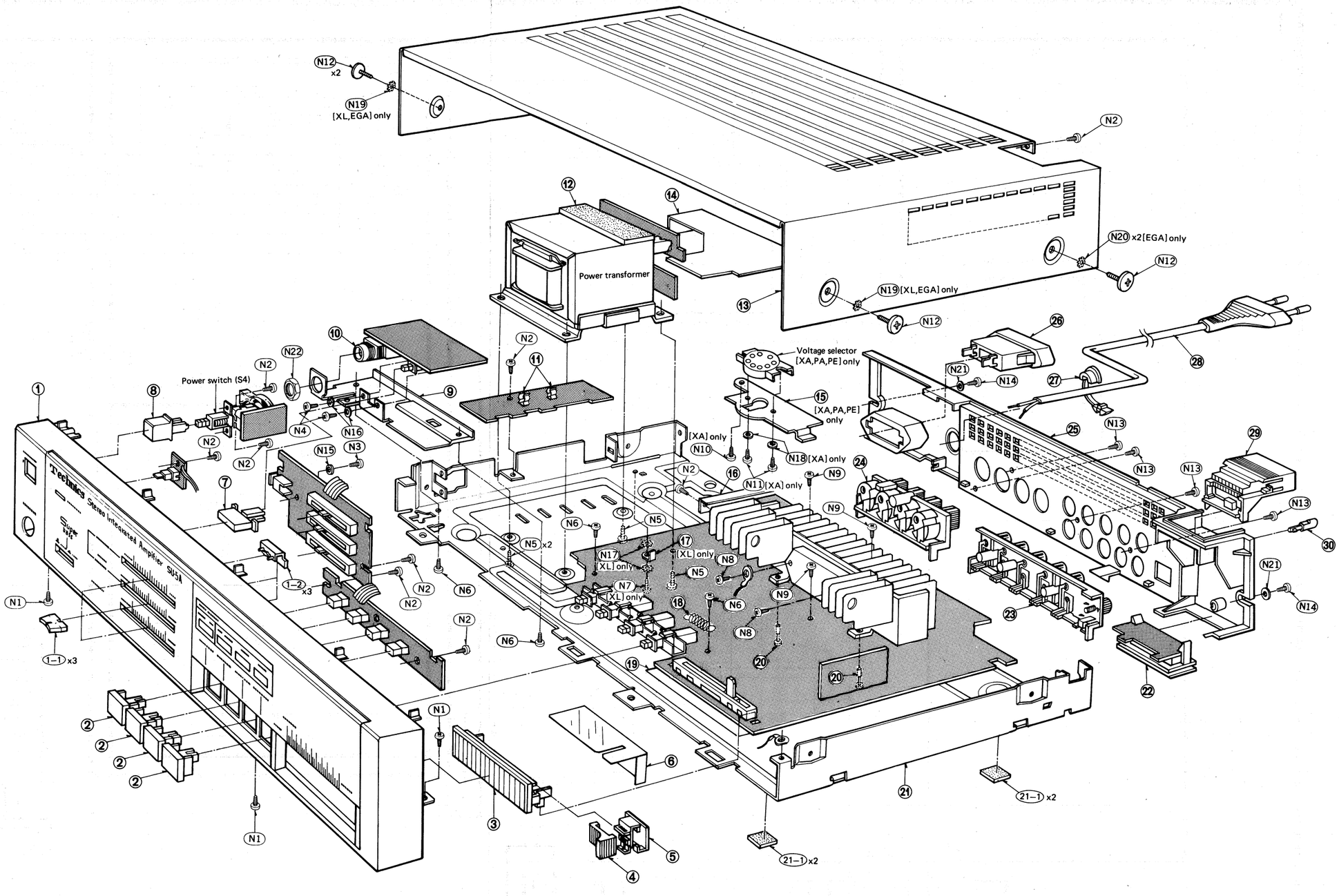

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B	①			⑧		⑦		1−2				⑨		⑪				⑱	⑰	⑯		⑮	㉔			㉓	㉗	㉕			㉘	㉙	㉚
C	1−1	②	②	②	②						③					⑲	④	⑥	⑤		⑳	21−1	⑳		㉑			21−1			㉒		

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